

CCIS 4100: in-class exercise on CSPs

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Complete the following either on your own or in small groups.

Solving the coloring problem via search

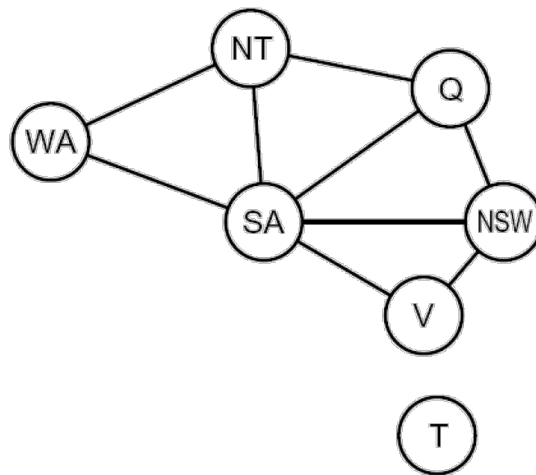


Figure 1: The map

Remember: the states here are partial assignments (nodes to variables) and the *successor function* generates children, i.e., new node assignments.

1. What would Breadth-First Search (BFS) do here? Sketch out the top and bottom levels in the expanded search tree (obviously I do not expect you to exhaustively enumerate). Where might solutions be found?
2. Similarly, sketch what would Depth-First Search (DFS) do here.
3. Do you think either of these naive search strategies is preferable? If so, which and why?
4. What are both of these naive search strategies doing that's *really* inefficient? How would you fix this?